Making *UNMAKEABLELOVE*

The Relocation of Theatre

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Introduction

We need machines that suffer from the burden of their memory.
Jean-François Lyotard (1991: 22)

This paper addresses the histories of liveness and performance and the life of machines by articulating theoretical positions on Samuel Beckett's prose work *The Lost Ones* in relation to a recent new media work UNMAKEABLELOVE (Kenderdine & Shaw 2008). UN-*MAKEABLELOVE* is a revisioning of Beckett's initial investigation that focuses and makes interactively tangible a state of confrontation and interpolation between ourselves and another society that is operating in a severe state of physical and psychological entropy. This interactive theatre advances the practices of algorithmic agency, artificial life, virtual communities, human-computer interaction, augmented virtuality, mixed reality and multimedia performance to engage 'the body's primordial inscriptions' (Schwab 2000: 73). Its mixed reality strategies of embodied simulation intricately engage the presence and agency of the viewers and impel them to experience the anomalies of a perceptual disequilibrium that directly implicates them in an alienated and claustrophobic situation. Beckett's prose has been interpreted by a number of leading scholars, including Lyotard in *The Inhuman* who speaks of 'systematic madness' (Lyotard 1991: 186), Porush who describes Beckett's 'cybernetic machine' and Schwab who interprets *The Lost Ones* as a kind of 'soul-making' (Schwab 2000: 73) and envisions the texts' narrative agency as 'a disembodied artificial intelligence' (ibid. 64) exploring the boundaries between the human and post-human.

As such, *UNMAKEABLELOVE* calls upon a long history of fascination with automatic theatre. This essay touches on automaton history and looks to key transformations in more recent times using new technologies. We also look at the 'computer as performer' and the notions of the human embodiment in relation to machines to make more explicit the entanglement in the theatre of the human-computer interface. Embedded within contemporary artistic practice, the role of the viewers and the theatrical concept of the spectacle are central concerns. Jonathan Crary in *Suspension of Perception* describes

the spectacle as a set of techniques for the management of bodies and the regulation of attention (Crary 1999: 9). And in *The Society of the Spectacle*, Guy Debord wrote '[T]he spectacle is not a collection of images, but a social relation among people, mediated by images' (Debord 1999: chapter 1.4). The masses subjected to the society of spectacle have traditionally been seen as aesthetically and politically passive – in response, both artists and thinkers have sought to transform the spectator into an active agent and the spectacle into a performance. In *Eclipse of the Spectacle*, Jonathan Crary suggests that the society of spectacle is no longer a fruitful paradigm because in a world characterised by 'digitized flows of data', the dominant society is no longer characterised by passive contemplation but rather by new investments of desire and new forms of representation (1984: 287). In understanding the transformations in theatre, philosopher and visual theorist Jacques Rancière observes new qualities:

> a new scene of equality where heterogeneous performances are translated into one another [...] For in all these performances what is involved is linking what one knows with what one does not know; being at once a performer deploying her skills and a spectator observing what these skills might produce in a new context among other spectators (Rancière 2009: 22)

UNMAKEABLELOVE locates Beckett's society of 'lost ones' in a virtual space that represents a severe state of physical confinement, evoking perhaps a prison, an asylum, a detention camp or a dystopia of a 'reality' TV show. As Beckett describes, 'The effect of this climate on the soul is not to be underestimated' (1972: 52). Viewers of this installation engage with the work through a hexagonal panoptic display system called Re-Actor. Wearing polarizing 3D glasses, up to six audience members are able to interrogate the world of stereographic virtual humans using interactive torches. Each torch casts real-time light beams onto the inhabitants confined within virtual space of Re-Actor. A technical description of the making of the work can be found in *UNMAKEABLELOVE. Gaming Technologies for the Cybernetic Theatre Re-Actor* (Kenderdine & Shaw 2009). The discussion in this essay examines the roles of human and virtual agents in the performance of the work. Interaction with the installation engenders participants complicit in the revealing of this world both for themselves and for other audience members who gather in front of the screens. Indeed, the active torch users are essential co-performers in the work, elemental to the endless play of an artificially intelligent world of machine agents, casting the only visible light into this world, revealing it at their will. Through augmented reality techniques, these 'performers' of the work also become embedded 'actors', visible to each other in the virtual world (in the real world they cannot see each other), albeit explicitly ignored by the community of virtual co-inhabitants.

The adventure of theatre and technological (re)construction provides context for some of these fresh relationships between the audience/spectator/performer and the virtual. Rancière offers us further insights in this context:

Like researchers, artists construct the stages where the manifestation and effect of their skills are exhibited, rendered uncertain in the terms of the new idiom that conveys a new intellectual adventure. The effect of the idiom cannot be anticipated. It requires the spectators who play the active role of interpreters, who develop their own translation in order to 'appropriate' the story and make it their own story. (Rancière 2009: 22)

I. Automaton Theatres

Figurines were amongst the earliest signs of human culture. In thinking about the history of the life of machines, it may well be that the first figurines imbued with agency (automatons) were the Egyptian shabti depicting servants engaged in different tasks, equipped with hoes, grain baskets and other necessary tools, who would continue to work for the wealthy and powerful in the netherworld. During the period of the Alexandrian school, Heron of Alexandria produced a number of manuscripts, including *The Automaton Theater*, that describes a puppet theatre controlled by strings, drums and weights. Mechanical, hydraulic and pneumatic automatons continued to be developed in medieval times in Europe and the Indian subcontinent.[1] In the notebooks of Villard de Honnecourt we encounter an enduring theme associated with the entire history of automata – the notion of a perpetual motion machine, a machine that could run itself for an infinite period. Hydraulics, magnetism and alchemy were variously considered as the likely source of such an inexhaustible and/or renewable energy source (Nocks 2007: 4-19).

Fig. 1   Ancient Egyptian shabti figurines from the Musée du Louvre, Paris.
           Source, photo: Hans Ollermann, 2008, online at Flickr

Fig. 2
'Abu'l Izz Ismail al-Jazari and
Farkh ibn Abd al-Latif: The
Elephant Clock: Leaf from
The Book of Knowledge of
Ingenious Mechanical
Devices by al-Jazari
(57.51.23)'. In: *Heilbrunn
Timeline of Art History*. New
York: The Metropolitan
Museum of Art, 2000.

It is chance that is infinite, not god.
Antonin Artaud (quoted in Derrida 2004: 46)

With the invention of computing machines, a new kind of virtual perpetual motion
apparatus came into existence with the capacity to render an 'automaton theatre' that
is artificially enlivened by software algorithms, imbuing its virtual fabrications with
agency. This circumstance allowed *UNMAKEABLELOVE*[2] to undertake a reconsidera-
tion of the nature of automatic theatre and of the existential dilemmas that can be
entertained within its realms of simulations and human interaction. Computers also
redefined the nature of interactivity between humans and machines, and works like
Jeffrey Shaw's *POINTS OF VIEW* (1983)[3] demonstrated how the artist is able to convert
that into a means of theatrical expression.

POINTS OF VIEW

POINTS OF VIEW was an experiment in computational theatre that espoused real-time
three-dimensional computer graphics and the extended space of real-time flight simu-

Fig. 3   *UNMAKEABLELOVE* © Kenderdine & Shaw, 2008.

lation as a dramatic and appropriate domain for artistic formulations and theatrical expression. In the late 1970s, Bruce Artwick developed the Flight Simulator, one of the first popular game engines that has become the longest running PC game series of all time (Artwick 1975). Early on, this game engine only permitted about one hundred low-resolution straight monochrome lines to be drawn, yet by engaging its potentialities and constraints, *POINTS OF VIEW* could configure an interactive audiovisual three-dimensional virtual world that the viewer was able to freely navigate in real time.
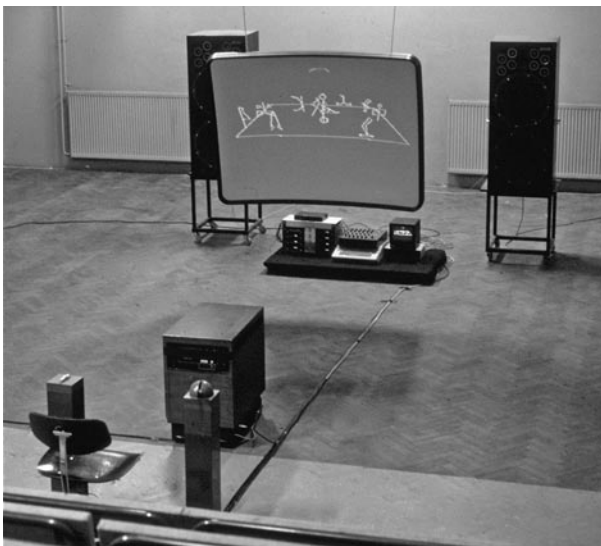

Fig. 4
POINTS OF VIEW
© Jeffrey Shaw, 1983.

In his 1905 essay *The Actor and the Über-Marionette*, Edward Gordon Craig called for 'a new form of acting, consisting for the main part of symbolic gesture' (quoted in Baugh 2005: 104). In *POINTS OF VIEW*, Egyptian hieroglyphics function as three-dimensional stick figures, constituting a theatre of linguistic symbols that is video-projected onto a large screen in front of a seated audience. One member of the audience using two specially designed joysticks can control the action of the work, moving his virtual point of view within a hemispherical space that contains the visual setting: 360 degrees around the stage, 90 degrees up and down from ground level to aerial view, and forwards and backwards from the centre of the stage. In this work the dramatic scenography has little to do with the movement of the hieroglyphic figurines but everything to do with the movement of the viewer's point of view with respect to those actors, and it is the viewer's virtual movement that constructs the temporal expression of this work's dramaturgy. This is also explicit in the sound design of *POINTS OF VIEW*, where it is not the linguistic symbols on stage that are audible but rather the commentators who are virtually located in the space that surrounds the stage and whose voices are heard by the viewers depending on their proximity to those commentators' positions in the virtual space. These sound tracks are interactively linked to the image via the same joystick that controls the user's visual navigation – it modulates the various voices in relation to the different spatial positions that the user is taking with respect to the stage scene. The mix of sound tracks thus generates an extemporary conjunction of spoken information that is directed at the shifting visual/conceptual juxtapositions of the hieroglyphic figures.

POINTS OF VIEW construes a navigable virtual theatrical space populated by its virtual figurines whose novel theatrical expression and temporal dramaturgical articulation is precipitated by the actions of the viewer. The notion of a miniature theatre of figurines is also the central dramaturgical construct in Mabou Mines' interpretation of *The Lost Ones*, while *UNMAKEABLELOVE* takes this paradigm further by extending the viewers' modalities of navigation and examination, by enlivening the synthetic actors' space with autonomous agency, and by translating viewer interactivity into viewer complicity.

Mabou Mines' The Lost Ones

The New York theatre company Mabou Mines are considered one of the foremost interpreters of Samuel Beckett's works. They premiered *The Lost Ones* in 1975, directed by Lee Breuer, designed by Thom Cathcart, performed by David Warrilow and with music by Philip Glass. Richard Gottlieb in the *Soho Weekly News* remarked, 'I've seen many Beckett Hells, but this is the first one I've experienced' (quoted in Mabou Mines, s.d.). Beckett's prose piece opens with stage directions for an eerie scene, evoking, in postmodern abstraction, a space resonating with Dante's Purgatorio: 'Abode where lost bodies roam, each searching for its lost one. Vast enough for search to be in vain. Narrow enough for light to be in vain. Inside a flattened cylinder fifty metres round and sixteen high for the sake of harmony' (Beckett 1972: 7).

Like works by Kafka, *The Lost Ones* creates a fictional and somewhat fantastic circum-

Fig. 5   *The Lost Ones* by Mabou Mines © Richard Landry, 1977.

stance of constraint and deprivation. It describes a community of about two hundred people who are incarcerated inside a confined space and the resulting existential tension of these inhabitants' lives. Minutely constructed according to geometrical shapes and measurements, *The Lost Ones* is populated by an abject and languishing people whose culture seems to be organised according to an elusive order, if not an unfamiliar harmony, the principles of which have yet to be discovered (ibid. 7-8).

The Mabou Mines' rendition of *The Lost Ones* has become an avant-garde legend, and there are certain aspects that demonstrate strategies of theatrical representation and viewer engagement that, albeit without its new media underpinnings, are synchronous with conceptual and operational methodologies in UNMAKEABLELOVE. Cathcart's stage design encompasses the entire theatre and is a specially constructed cylindrical amphitheatre in which the audience members sit, so that they are led to focus on their own circumstance and compare their own state of incarceration with that of Beckett's protagonists. This interpolation of real and fictional space that is a feature of UNMAKE-ABLELOVE's mixed reality is a tactic that 'puts us in (the play's) own state of ontological estrangement' (Kalb 1989: 139). Mabou Mines' production also follows the traditions of the theatre of automatons by articulating its representation of *The Lost Ones*' environment and characters as a small architectural model inhabited by tiny centimetre-high stick figures. These figures are manipulated by the production's single actor/narrator who dramatises his narrative telling of their predicament. In anticipation of the optical immersion afforded by virtual reality technologies, the audience members are each given opera glasses so that they can peer into this micro-world and lose themselves in its estranged imaginary. But like UNMAKEABLELOVE, immersive engagement is directly

accompanied by techniques that shift the symmetry of real and virtual ontologies into a theatrical condition of paradoxical confrontation that implies the complicity of the viewer. For example, both productions exploit lighting to this effect. *UNMAKE-ABLELOVE*'s totally darkened space only becomes perceptible via the torch beams that are directed by the viewers, while at one point in the Mabou Mines' production, the single hanging lamp that illuminates the performance suddenly switches off and plunges everything, including the audience, into a shared state of pitch darkness. Then, as the actor 'speaks his final anecdote to a toy figure balanced on his knee, illuminating it with a penlight, apparently dispending with distinctions amongst contexts, questions arise to threaten to throw all mimetic readings into confusion' (ibid. 138). These 'vacillations of identities and contexts' (ibid.) is key to both undertakings.

II. Re-Actor

The history of the cinematic experience is a rich chronicle of viewing and projection machines. Before Hollywood imposed its set of ubiquitous formats, there were a myriad of extraordinary devices, like the Lumière Brothers' Photodrama, the Cyclorama, Cosmorama, Kineorama, Neorama, Uranorama and many more. Tom Gunning, in his writings on the visual regimes of magic performance and early cinema, reveals how in this 'cinema of attractions', the viewer's interest is solicited by means of overt display that is 'willing to rupture a self-enclosed fictional world' (Gunning 1990: 57). The Kaiserpanorama – a stereoscopic cylindrical peepshow – is an especially relevant forerunner of a newly configured display system, Re-Actor.
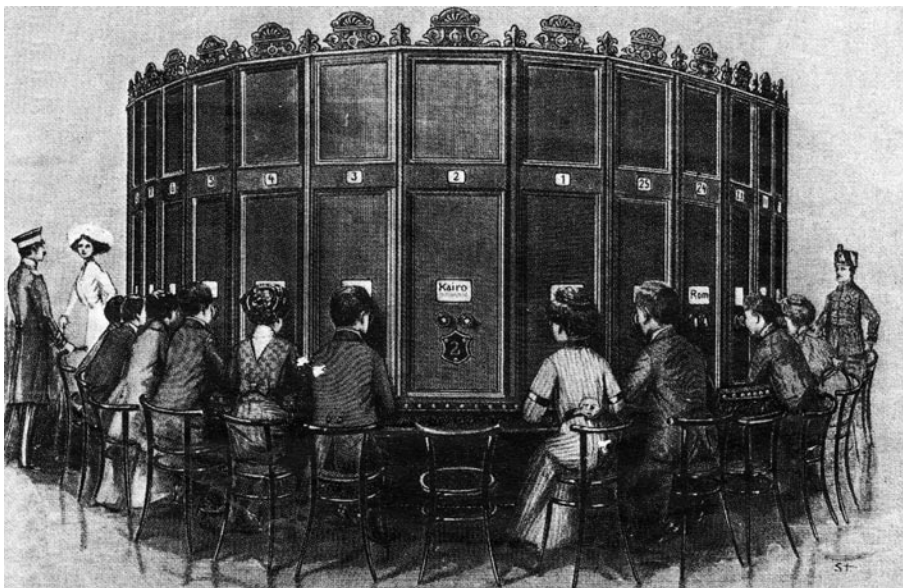

Fig. 6   Kaiserpanorama circa 1880-1910. Source:

In 1911, Franz Kafka saw a Kaiserpanorama and wrote:

the scenes [are] more alive than in the cinematograph […] because they allow the
eye the stillness of reality. The cinematograph lends the observed objects the agi-
tation of their movements, the stillness of the gaze seems more important.
Smooth floors of the cathedrals in front of our tongue. (quoted in Zischler 2003:
25)

David Trotter, media theorist, takes note of Kafka's appreciation of the scene's quali-
ties of 'tactility'. The images are indeed tactile in the specific ways found only in immer-
sive architectures and through stereographic materials.
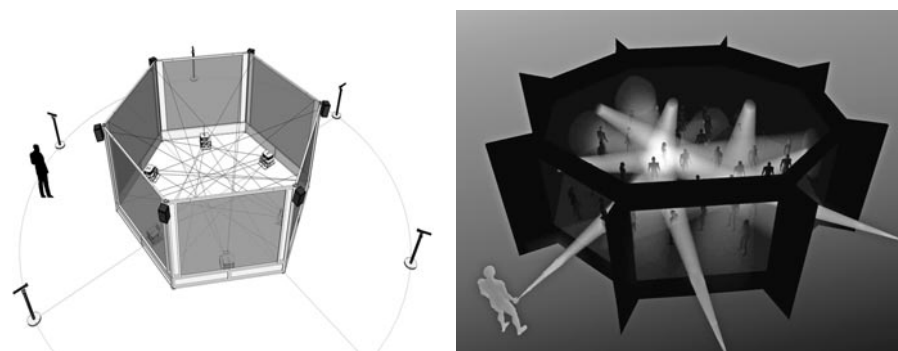

Fig. 7 and 8   Axonometric plan view and schematic diagram of Re-Actor © Kenderdine & Shaw, 2008.

Re-Actor evolved from Museum Victoria's highly successful Virtual Room (Kender-
dine & Hart 2003), and the uniqueness of this system was its ability to conjure a per-
suasive and coherent three-dimensional virtual reality within an architectonic enclo-
sure that the audience could freely circulate around and gaze into. Re-Actor's six
rear-projected screens use twelve projectors, passive Polaroid filters and glasses for
stereoscopic three-dimensional viewing. It is operated by six workstations that are
connected to six pairs of 1050 x 1400 pixel Projectiondesign DLP projectors. The
UNMAKEABLELOVE installation also has six custom-made torch interfaces that are
positioned in front of each screen, and six infrared video cameras are positioned above
each screen. These torches enable the visitors to peer into the virtual world; their vir-
tual light beams intersect and illuminate the computer-generated figures that inhabit
its virtually represented interior.

UNMAKEABLELOVE in Re-Actor offers a physically immersive three-dimensional
space of representation that constitutes an augmentation and amalgamation of real
and virtual realities. It is a hybrid location-based manifestation that operates both as an
individual and socially shared experience, and its interactive modalities of operation
incorporate the kinaesthetic dimensions of human apprehension to establish a con-
gruence of human and machine agency. To explicitly articulate the conjunction be-

Fig. 9   Interactive torches and augmented reality interface in UNMAKEABLELOVE
         © Kenderdine & Shaw, 2008.

tween the real and virtual spaces in this work, the viewer's virtual torch beams penetrate
through the container and illuminate other viewers who are standing opposite them on
other sides of the installation. This augmented reality is achieved using infrared cam-
eras that are positioned on each screen pointing at its respective torch operators, and
the video images are rendered in real time onto each viewer's screen so as to create the
semblance of illuminating the persons opposite them. The resulting ambiguity experi-
enced between the actual and rendered reality of the viewers' presences in this installa-
tion reinforces the perceptual and psychological tensions between 'self' and 'other'. In
'Deconstructing the Machine. Beckett's *The Lost Ones*', David Porush perceives the cylin-
der as an enormous cybernetic machine controlled from some outside source (1985:
157-171). In UNMAKEABLELOVE, 'control' is both illusive and made more explicit. Par-
ticipants operate through the sensorium of interaction with Re-Actor, its inhabitants
and each other. The space that opens 'facilitates the emergence of hitherto unimagined
visions and sensations that exert a unique appeal to the senses and generate an intense
cathexis' (Schwab 2000: 73).

   Virtual space is distinguished by the paradoxical relationships it can configure with
real space – its multi-dimensional environments and temporal warps are like funhouse
mirrors that deform (and reform) our everyday perceptions. Yet these digital manipula-
tions of the world are not so far removed from the traditional activities of art and science
that also re-interpret the world through various modalities of re-presentation. In that
sense it is the interplay between reality and virtuality that is the crux of the undertaking,
and this interplay is also at work within the engine of UNMAKEABLELOVE. Samuel Beck-
ett's 'lost ones' constitute what can be understood as a terminal community, and UN-

MAKEABLELOVE expresses this exigency as a living theatre of human performativity that has mutated into a virtual theatre of machine agents whose code heralds their extinction. On many levels, real and virtual, life and death are interpolated and concurrent in this mutant realm. *UNMAKEABLELOVES*'s citizens are animated by the motion-captured recordings of real performers, but these now constitute a database (a fragmented memory bank) of behaviours that are con-scripted by the computerised codes of their virtual re-presentation. Fragments of memory, fragments of the real, still operate at this intersection of presence and absence, which multiplies again as a new kind of 'theatre and its double' by incorporating the presence of living viewers as witnesses and inhabitants of this liminal zone. The operational correlation (and con-fusion) between what is real and what is represented dictates the design of Re-Actor. The overtly physical architecture of its visualization system differentiates it from VR head-mounted displays (HMD).[4] While an HMD enables an effective conjunction of real and virtual elements, it embeds the real with an encompassing virtual frame whereas Re-Actor embeds the virtual within the surrounding real-world frame. The latter strategy is more suited to a theatrical enterprise that wants to locate the shocking immediacy of this capsule of 'lost ones' as an entity (inhabitation) that is 'living' in our actual midst (thereby reminding us for example of the proximity of those many other enclosures of human deprivation and degradation that are in operation worldwide).

Cybernetic Systems and Performing Perception

New media theories of performance and spectatorship tend to emphasise interaction between human and machine as an embodied theatre of participation. From the perspective of the social interaction and individual/group interaction within *UNMAKE-ABLELOVE*, it is worthwhile to explore the dynamic series of relationships as performance in this cybernetic theatre. As this essay infers, digital technologies can be contextualised within the historical frameworks of human experience and immersion in all types of media, and interactive and immersive cinema has clear links to performance, ritual, theatre, the circus and painting (Burnett 2005: 129).

Recognizing the performative qualities of the human-computer interface, Brenda Laurel (1993) wrote a seminal work on 'computers as theatres' that set the stage for the discussions that followed.[5] McKenzie went on to suggest that 'one might invent the computer as performance' (1994: 90). Media theorist Gabriella Gianacchi, in her analysis of the virtual theatre, describes it as 'one which through its virtuality is able not only to include the viewers within the art but also to distribute their presence globally in both the real and simulated virtual world' (2004: 10).

It is useful to emphasise here the difference between (virtual) theatres and cinema to distinguish once again the different modalities and affordances of new media installations from the cinematic. Performance theorist Gay McAuley writes:

> Actors are energized by the presence of the spectators, and the live presence of the actors means that the spectators' relationship to them is very different from the relationship between spectator and dramatic fiction in the cinema. In the theatre, due to the live presence of both spectators and performers, the energy circulates from performer to spectator and back again, from spectator to performer and back again [...] the live presence of both performers and spectators creates complex flows of energy between both groups [...]. (quoted in The Presence Project, 2007)

The theoretical discussion of performative qualities of the cybernetic theatres often neglects the primary communication that occurs between people in the real-world space as they perform the act of spectatorship or user participation. The aesthetics of interaction are 'rooted in the user's experience of herself performing her perception' (Dalsgaard & Koefoed Hansen 2008: 1). Both performance theory and sociology, when considering how a Human-Computer Interface (HCI) works, suggest that the user is simultaneously the operator of the system, the performer of the system and the spectator.

Interactivity has been a seminal feature of media art research over the last decades, and it proliferates because the digital technologies open a broad new range of interaction-design possibilities that were not available in the analogue world. While interactivity exists during a theatre performance inasmuch as each member of the audience reconstructs its meaning and expression as a personal experience, in the 1960s, happenings and 'expanded cinema' performances enlarged this interactivity by offering members of the audience opportunities to physically intervene in and modulate the outcome (Shaw 2003: 19). In the digital domain, Jeffrey Shaw's art practice over the last forty years has researched numerous computerised forms of interactivity that articulate an interaction paradigm whereby the viewer becomes an explorer of virtual spaces and discoverer of combinatory narratives (Duguet et al. 1997). The interactivity offered by the authors of UNMAKEABLOVE is a hybrid of these theatrical and digital modalities. Its six physical torches ('search-lights') allow viewers to individually illuminate and explore the virtual scene, and these moving, intersecting torch beams constitute a significant aspect of its dramaturgical aesthetic. But at the same time the viewers cannot intervene in the computer-coded behaviour of the denizens of UNMAKEABLELOVE – these self-absorbed 'lost ones' follow Samuel Beckett's algorithmic prescription and are oblivious to the viewer's presences or actions. We interact in this world via those intangible theatrical strategies of confrontation, identification and complicity.

In multi-participatory works, which embody a single or multiple operators/users *and* multiple spectators (as in UNMAKEABLELOVE), numerous bonds exist between the user and the spectators, and the user and the system. Between the user and the system, the concept of embodiment is of primary concern. Embodiment is a 'participatory' status and a foundation for exploring interaction in context (Dourish 2001). In terms of the trichotomy of system-user-spectators, embodiment implies a reciprocal relation-

ship with the context, encompassing users, interactive systems, spectators, co-users, physical surroundings and the meanings ascribed to these entities (Dalsgaard & Koefoed Hansen 2008: 5; Dourish 2001). Four researchers of computer-human interaction – Stuart Reeves, Steve Benford, Claire O'Malley and Mike Fraser – address the issue of how a spectator should experience a user's interaction with the computer (2005: 48).[6] Borrowing from performance theory, the user is the inter-actor with the system and the interaction between the user and the system is the performance. While this relationship is what is mostly described in media art and HCI, it is the spectators' relation to and experience of the performance that is also of interest here. As Dalsgaard and Koefoed Hansen describe:

> It is the ways in which the user perceives and experiences the act of interacting with the system under the potential scrutiny of spectators that greatly influences the interaction as a whole [...] it is precisely this awareness of the (potentiality of a) spectator that transforms the user into a performer. (2008: 6)

The key to this relationship is the 'awareness' of others, which provides the context for individual activity. The tension that occurs is between the spectators watching the user and the user's awareness of being the centre of the spectators' gaze. The user not only acts in relation to the system but is propelled by the knowledge that her perception of the system is a performance for others. Dalsgaard and Koefoed Hansen call this 'performing perception' (ibid. 31). The user simultaneously engages in three actions: the act of interacting with the system; the act of perceiving himself/herself in relation to the system and her surroundings; and the act of performing (ibid.).
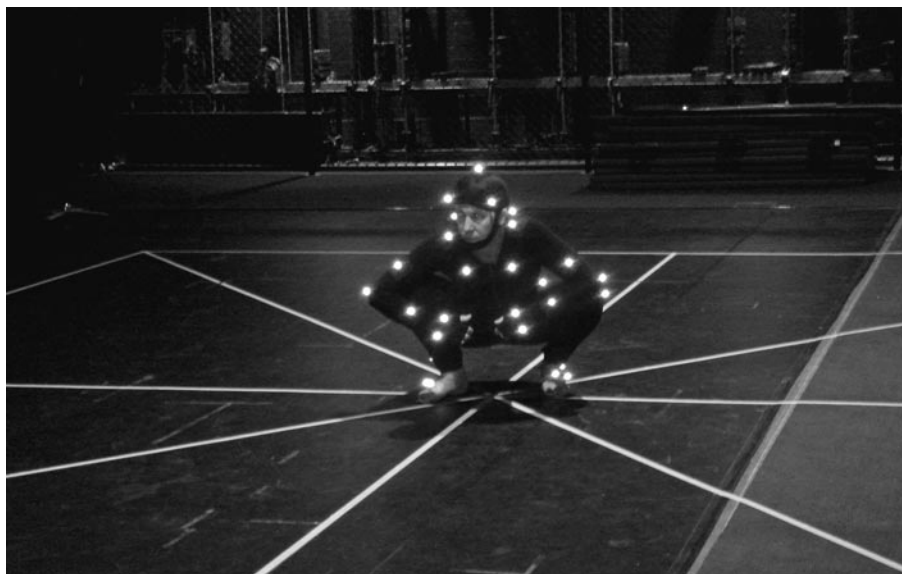

Fig. 10   Motion capture for *UNMAKEABLELOVE* © Kenderdine & Shaw, 2008.

Fig. 11   Characters in UNMAKEABLELOVE revealed by interactive torches of viewers
        © Kenderdine & Shaw, 2008.

III. Making UNMAKEABLELOVE

The Lost Ones describes a community of about 200 people who inhabit a cylinder that is 50 metres in diameter and 18 metres high. In UNMAKEABLELOVE this is scaled down to 30 characters that inhabit Re-Actor's hexagonally shaped room that is 5.5 metres wide and 3.5 metres high. To reflect the body-to-space ratio that Beckett proposes, its characters are reduced to approximately half life-size. Three actors performed over 300 motion-captured sequences that became the primary resources for the real-time behaviours of the characters in UNMAKEABLELOVE. Each character is a 12,000 triangle polygonal model with a 1024 x 1024 pixel texture and is animated by a 53-bone skeleton. Real-time rendering of the characters using the Microsoft XNA game engine allows for dynamic lighting, controlled by the viewers. Six volumetric light beams, casting shadows onto each other and the environment, light the characters.

Coding UNMAKEABLELOVE

The almost scientific exactitude of Beckett's text enables it to be analysed and coded into software algorithms that can then computationally animate virtual representations of his characters. In UNMAKEABLELOVE, these virtual representations then become the seemingly self-motivated narrative agents of Beckett's scenario.

The world of UNMAKEABLELOVE consists of the Searchers who are always active and searching in vain, the Sedentary who no longer move around and are only occasionally roused from their lethargy, and the Defeated for whom all hope is gone and who are slumped and vaguely stirring in the perimeter of the enclosure. Each group with their

specific behaviours is largely confined to particular zones inside the hexagonal space and permitted occasional interactions, moving between zones. Violence sporadically breaks out, and now and then they collide in a frenzied sexual encounter. The narrative agency in *The Lost Ones* has been described as a 'disembodied artificial intelligence' (Schwab 2000: 61). One can imagine its denizens as inhabiting a posthuman space, the last humans secluded in a capsule that is, like a nautilus, organised according to a 'self-sufficient cosmogony, which has its own categories, its own time, space, fulfilment and even existential principle' (Barthes 1972: 65).

UNMAKEABLELOVE advances the practices of algorithmic agency, artificial life, virtual communities, human-computer interaction, augmented virtuality, mixed reality and multimedia performance in a 'polyaesthetic' experience to 'engage the body's primordial inscriptions' (Schwab 2000: 73). It locates Beckett's society of 'lost ones' in a virtual space that represents a severe state of physical and psychological entropy, evoking perhaps a prison, an asylum, a detention camp, or a dystopian Big Brother show; 'the condition of the human at its ultimate vanishing point' (ibid. 63). The inhabitants of Beckett's cylindrical space are oblivious to their condition, and we, the viewers of their world, with our probing torch lights and prying gaze, are positioned as the 'other' and forced to experience the anomalies of a perceptual disequilibrium that implicates us in this alienated narrative. The resulting ambiguity reinforces a perceptual and psychological tension between 'self' and 'other' generated by the works' mixed reality strategies of embodied simulation that intricately engage the presence, agency and complicity of the viewer.

UNMAKEABLELOVE takes motion-captured, human-performed actions and then re-embodies and codifies them in a post-theatrical space of virtual representation. The Australian artist Stelarc is a researcher who also explores mediated ways to engage the complicity of the viewer in theatrical expressions. His *MOVATAR*, which he calls an 'inverse motion capture system' (Stelarc, s.d.), maintains his tangible on-stage presence where he is transformed into a post-human machine agent being remote-controlled by people acting on his body over the internet. Despite the dissimilar aesthetic and technological approaches in *UNMAKEABLELOVE* and *MOVATAR*, both achieve the viewer's identification with a 'suffering object' (Stelarc's *Involuntary Body*, see Fernandes 2002). Yet the latter presents a narrative that is entirely played out within its interaction paradigm, while *UNMAKEABLELOVE* plays across a human imaginary as it has been plotted in Samuel Beckett's *The Lost Ones*.

> *There must be no let up, no vacuum in the audience's mind or sensitivity...*
> Antonin Artaud (quoted in Derrida 2004: 47)

Following from Artaud, Marinetti and Brecht, *UNMAKEABLELOVE* reframes the central role of the audience in theatrical experimentation. But rather than the convivial participations described in *Relational Aesthetics* (Bourriaud 2002), *UNMAKEABLELOVE* alludes to more troubled evidence of audience behaviour such as the violence that it perpe-

trated in the Living Theatre's *Paradise Now!* (Avignon Festival 1968) and Marina Abramovic's *Rhythm O* (Studio Morra, Naples, 1974). Facing up to this latent pathology, Terry O'Connor, an actor in Forced Entertainment's *Showtime* (Alsager Arts Centre, Stoke-on-Trent 1996) suddenly shouts at the audience: 'What the fuck are you looking at? What the fuck is your problem? Fuck off! Voyeurs! There's a fucking line and you've just crossed it. Where's your human decency?' (in Freshwater 2009: 52; cf. Etchells 1999).

UNMAKEABLELOVE interpolates two scenarios for this loss of 'human decency' – one that is evoked in Beckett's existential endgame *The Lost Ones*, and the other that confronts the viewer/voyeur with the explicit experience that they are complicit in both the origin and outcome of this endgame. It is a spectrum that ranges from interpersonal sadism and refugee brutality to environmental defilement. Conjoined in the narrative extremity of Beckett's *The Lost Ones*, *UNMAKEABLELOVE*'s computational scenography exposes that 'What is tragic is not the impossibility, but the necessity of repetition' (Derrida 2004: 44). *UNMAKEABLELOVE*'s torch-lit metaverse correlates with Susan Sontag's observations on Artuad's view of shadows and spectacles:

> Artaud thinks that modern consciousness suffers from a lack of shadows. The remedy is not to remain in (Plato's) cave but devise better spectacles. The theatre that Artaud proposes will serve consciousness by 'naming and directing shadows' and destroying the 'false shadows' to 'prepare the way for a new generation of shadows' around which will assemble 'the true spectacle of life'. It will be a stage of extreme austerity dominated by the 'physics of the absolute gesture, which is itself idea'. (2004: 88)

Here the rigour of an algorithmically defined and simulated universe of prescribed emergent behaviours aligns with Artaud's contempt for dramatic performativity: 'the uselessness of the action, which, once done, is not to be done, and the superior use of the state unused by the action, and which restored produces a purification' (1958: 82). *UNMAKEABLELOVE*'s actors do not strike poses or construct gestures, they respond to events out of computational necessity. As in Dante's Purgatorio, gloominess and indifference periodically lead to 'zeal and fervent affection' (Purgatorio Canto XVIII), and now and then Beckett's vanquished resurrect to perform vain attempts at copulation. In *UNMAKEABLELOVE*, lovers are caught in desiccated bodies whose 'hampering effect on the work of love' condemns them to perform a grotesque spectacle of 'making unmakeable love' (Beckett 1972: 37). Understood as a 'glittering' space of 'cryptic incorporation' (Perniola 2003: 69), *UNMAKEABLELOVE*'s forever-automated posthuman universe is driven by a 'gratuitous and baseless necessity' (Derrida 2004: 46).

> To think the closure of representation is to think the tragic: not as the representation of fate, but as the fate of representation. And it is to think why it is fatal that, in its closure, representation continues. (ibid.)

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NOTES

1 An excellent article about the history of al-Jazari's automata can be found in Nadarajan (2007).
2 *UNMAKEABLELOVE* is an interactive artwork by Sarah Kenderdine and Jeffrey Shaw first launched for the eArts Festival, Shanghai 2008. Since then it has toured worldwide. Most recently, it premiered in Hong Kong at the HK Arts Fair 2011. See <http://unmakeablelove.org>.
3 For *POINTS OF VIEW* by Jeffrey Shaw (Mickery Theatre, Amsterdam 1983), see <http://www.jeffrey-shaw.net/html_main/show_work.php3?record_id=67>.
4 Head Mounted Display, see<http://en.wikipedia.org/wiki/Head-mounted_display>.
5 Other seminal figures include Philip Auslander.
6 Steve Benford and his associates at Collaborative Computing in the Mixed Reality Laboratory at the University of Nottingham extend the user-spectator relation through a series of locative media interactive game/performances (Bell et al. 2006).

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